

GenCore version 4.5  
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OM protein - protein search, using sw model

Run on: August 21, 2001, 12:06:13 ; Search time 20.59 Seconds

(without alignments)  
924,523 Million cell updates/sec

Title: US-09-486-334-2

Sequence: 1641  
1 MATCIDRCRGTNTDDDSRF.....IPCILMDQSTYLEMSDYVI 314

Scoring table:

BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 412676 seqs, 60623988 residues

Total number of hits satisfying chosen parameters: 412676

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%

Listing first 45 summaries

Database :

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	1641	100.0	314	21	AA645802
2	1641	100.0	314	21	AAV93901
3	1349	82.2	263	21	AA645803
4	1215	74.0	336	21	AA693903
5	1215	74.0	391	21	AAV93904
6	1213	73.9	1772	21	AA652485
7	1213	73.9	1776	21	AA652484
8	1213	73.9	1787	21	AA652483
9	916	55.8	180	21	AA608083
10	880	53.6	286	21	AAV44770
11	849.5	51.8	312	21	AA639465

12	849.5	51.8	312	21	AAV93902	Amino acid sequenc
13	846.5	51.6	312	21	AA621076	Arabidopsis thalia
14	846	51.6	294	21	AAV44767	Impatiens balsamia
15	831	50.6	303	21	AAV44768	Rice serine O-acet
16	723.5	44.1	224	21	AAV44769	Rice serine O-acet
17	711	43.3	359	21	AAV93905	Amino acid sequenc
18	656	40.0	157	21	AAV44771	Soybean serine O-a
19	652.5	39.8	273	18	AAW5073	E. coli serine ace
20	648.5	39.5	258	18	AAW5084	E. coli serine ace
21	648.5	39.5	259	18	AAW5083	E. coli serine ace
22	648.5	39.5	263	18	AAW5093	E. coli serine ace
23	648.5	39.5	268	18	AAW5092	E. coli serine ace
24	648.5	39.5	271	18	AAW5091	E. coli serine ace
25	648.5	39.5	273	13	AAW3780	E. coli serine tran
26	648.5	39.5	273	13	AAW3780	E. coli serine tran
27	648.5	39.5	273	18	AAW16618	Wild type Escheric
28	648.5	39.5	273	18	AAW16618	Protein encoded by
29	648.5	39.5	273	20	AAV3827	Escherichia coli s
30	648.5	39.5	273	20	AAV3827	Escherichia coli s
31	646.5	39.4	273	18	AAW5070	E. coli serine ace
32	645.5	39.3	273	18	AAW5078	E. coli serine ace
33	645	39.3	253	21	AAV57826	Escherichia coli s
34	644	39.2	253	21	AAV57826	Escherichia coli s
35	643.5	39.2	257	18	AAW5085	E. coli serine ace
36	643.5	39.2	273	18	AAW5075	E. coli serine ace
37	643.5	39.2	273	18	AAW5077	E. coli serine ace
38	642.5	39.2	273	18	AAW35071	E. coli serine ace
39	642.5	39.2	273	18	AAW35068	E. coli serine ace
40	642	39.1	259	21	AAW5084	Arabidopsis thalia
41	642	39.1	253	21	AAV57830	Escherichia coli s
42	641.5	39.1	273	18	AAW35082	E. coli serine ace
43	641.5	39.1	273	18	AAW35069	E. coli serine ace
44	641	39.1	253	21	AAV57831	Escherichia coli s
45	640.5	39.0	175	21	AAV44765	Corn serine O-acet

#### ALIGNMENTS

##### RESULT 1

AA645802 standard; Protein; 314 AA.

AC AA645802;

DT 18-OCT-2000 (first entry)

DE Arabidopsis thaliana protein fragment SEQ ID NO: 57548.

KW Protein identification; signal transduction pathway; metabolic pathway;

KW hybridisation assay; genetic mapping; gene expression control; promoter;

termination sequence.

OS Arabidopsis thaliana.

PN EP1033405-A2.

PD 06-SEP-2000.

PF 25-FEB-2000; 2000EP-0301439.

PR 25-FEB-1999; 990S-0121825.

PR 05-MAR-1999; 990S-0123180.

PR 09-MAR-1999; 990S-0123548.

PR 23-MAR-1999; 990S-0125788.

PR 25-MAR-1999; 990S-0126264.

PR 29-MAR-1999; 990S-0126785.

PR 01-APR-1999; 990S-0127462.

PR 06-APR-1999; 990S-0128234.

PR 08-APR-1999; 990S-0128714.

PR 16-APR-1999; 990S-0129845.

PR 19-APR-1999; 990S-0130077.

PR 21-APR-1999; 990S-0130449.

PR 23-APR-1999; 99US-0130510.  
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 PR 29-OCT-1999; 99US-0162142.

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 DB 1 matcidtctrtgntqddsrffcciknffrpfsvnrkithnqiedddvwmkleaksdv 60  
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 DB 61 kgepllsnyvastshtsrlesalahilsvklsnlpntlfelefsyleespetiest 120  
 QY 121 KODLIARERDPACISYVHCFEGKFLACQAHRIATHLMKONRKIVALLTONRVSSEFA 180  
 DB 121 kqdliavererpactisyvhcfegkflacqahriahtlmkgnkivaalllqnrvsesfa 180  
 QY 181 VDHPGAKIGKGLLDHAGVVIGETAVVGDVNSILHGVTLGSTGKSGDRHPKIGDGLV 240  
 DB 181 vdhpgakigkglldhagvviigetavvgdnvsihgvclgsgtqksgdtrhpkiqdgvl 240  
 QY 241 IGAGSCITGNITIGEGAKIGSGSVVVKDVPARTAVAGNPARLIGKKNPRKHDKIPCLTM 300  
 DB 241 igagsciltgnitigegakigsgsvvkvdpavrtavagnparli99kenprkhdkiplcltm 300  
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 DB 301 dqtsylewsgdyvi 314

## RESULT 2

AAV93901 standard; Protein; 314 AA.

AAV93901;

03-OCT-2000 (first entry)

DE Amino acid sequence of serine acetyltransferase (SAT) isoform SAT3.  
 XX  
 KW Serine acetyltransferase; SAT; SAT3; transgenic plant; cysteine;  
 KW glutathione; methionine; nutrient value; plant-derived food;  
 XX glutathione; viral resistance.

XX Arabidopsis thaliana.

PN WO200036127-A1.

XX \*22-JUN-2000.

XX 17-DEC-1999; 99MO-FR031179.

XX 17-DEC-1998; 98FR-0016163.  
 XX (AVER ) AVENTIS CROPS SCIENCE SA.  
 PA Droux M, Lappartient A, Derose R, Job D;  
 PI WPI; 2000-431603/37.  
 DR N-PSDB; AAA47173.  
 XX  
 PT Increasing production of sulfur-containing compounds, e.g. cysteine or  
 PT methionine, in plants, useful e.g. for improving nutritional value, by  
 PT overexpressing serine acetyltransferase  
 XX  
 PS Claim 9; Page 50-51; 69pp; French.  
 CC The present sequence represents an isoform of serine acetyltransferase  
 CC (SAT). The SAT polynucleotide is used to produce transgenic plants,  
 CC which have increased production of cysteine, glutathione, methionine  
 CC and their sulfur-containing derivatives. SAT catalyses conversion of  
 CC serine to O-acetylsulfonamide which is a precursor (by reaction with sulphide)  
 CC for cysteine, itself a precursor for the other sulphur-containing  
 CC compounds. The SAT polynucleotides and polypeptides are used to improve  
 CC the nutrient value of plant-derived foods, and also (associated with  
 CC increased production of glutathione) to improve resistance to stress.  
 CC  
 XX Sequence 314 AA:

Query Match 100.0%; Score 1641; DB 21; Length 314;  
 Best Local Similarity 100.0%; Pred. No. 2e-151;  
 Matches 314; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
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 DB 1 matcidtctrtgntqddsrffcciknffrpfsvnrkithnqiedddvwmkleaksdv 60  
 QY 61 KOEPLISNYVASTSHRSLSALAHILSVKLSNLPNTLFELETSYLESPETIEST 120  
 DB 61 kgepllsnyvastshtsrlesalahilsvklsnlpntlfelefsyleespetiest 120  
 QY 121 KODLIARERDPACISYVHCFEGKFLACQAHRIATHLMKONRKIVALLTONRVSSEFA 180  
 DB 121 kqdliavererpactisyvhcfegkflacqahriahtlmkgnkivaalllqnrvsesfa 180  
 QY 181 VDHPGAKIGKGLLDHAGVVIGETAVVGDVNSILHGVTLGSTGKSGDRHPKIGDGLV 240  
 DB 181 vdhpgakigkglldhagvviigetavvgdnvsihgvclgsgtqksgdtrhpkiqdgvl 240  
 QY 241 IGAGSCITGNITIGEGAKIGSGSVVVKDVPARTAVAGNPARLIGKKNPRKHDKIPCLTM 300  
 DB 241 igagsciltgnitigegakigsgsvvkvdpavrtavagnparli99kenprkhdkiplcltm 300  
 QY 301 DQTSYLEWSDYVI 314  
 DB 301 dqtsylewsgdyvi 314

## RESULT 3

AAV93901 standard; Protein; 263 AA.

AAV93901;

18-OCT-2000 (first entry)

DE Arabidopsis thaliana protein fragment SEQ ID : 57549.

XX Protein identification; signal transduction pathway; metabolic pathway;  
 KW hybridisation assay; genetic mapping; gene expression; regulation; promoter;  
 KW termination sequence.

OS Arabidopsis thaliana.

XX  
PN EP1033405-A2.  
XX  
PD 06-SEP-2000.  
XX  
PF 25-FEB-2000; 2000EP-0301439.  
XX  
PR 25-FEB-1999; 99US-0121825.  
PR 05-MAR-1999; 99US-0123180.  
PR 09-MAR-1999; 99US-0123548.  
PR 23-MAR-1999; 99US-0125788.  
PR 25-MAR-1999; 99US-0126264.  
PR 29-MAR-1999; 99US-0126785.  
PR 01-APR-1999; 99US-0127462.  
PR 06-APR-1999; 99US-0128234.  
PR 08-APR-1999; 99US-0128714.  
PR 16-APR-1999; 99US-0129845.  
PR 19-APR-1999; 99US-0130077.  
PR 21-APR-1999; 99US-0130449.  
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PR 20-JUL-1999; 99US-0144884.  
PR 21-JUL-1999; 99US-0144814.  
PR 21-JUL-1999; 99US-0145086.  
PR 21-JUL-1999; 99US-0145088.  
PR 22-JUL-1999; 99US-0145085.  
PR 22-JUL-1999; 99US-0145087.  
PR 22-JUL-1999; 99US-0145089.  
PR 22-JUL-1999; 99US-0145192.  
PR 22-JUL-1999; 99US-0145192.  
PR 23-JUL-1999; 99US-0145145.  
PR 23-JUL-1999; 99US-0145218.  
PR 23-JUL-1999; 99US-0145224.  
PR 26-JUL-1999; 99US-0145276.  
PR 27-JUL-1999; 99US-0145913.  
PR 27-JUL-1999; 99US-0145918.  
PR 27-JUL-1999; 99US-0145919.  
PR 28-JUL-1999; 99US-0145951.  
PR 02-AUG-1999; 99US-0146386.  
PR 02-AUG-1999; 99US-0146388.  
PR 02-AUG-1999; 99US-0146389.  
PR 03-AUG-1999; 99US-0147038.  
PR 04-AUG-1999; 99US-0147204.  
PR 04-AUG-1999; 99US-0147302.  
PR 05-AUG-1999; 99US-0147192.  
PR 05-AUG-1999; 99US-0147260.  
PR 06-AUG-1999; 99US-0147303.  
PR 06-AUG-1999; 99US-0147416.  
PR 09-AUG-1999; 99US-0147493.  
PR 09-AUG-1999; 99US-0147935.  
PR 10-AUG-1999; 99US-0148171.  
PR 11-AUG-1999; 99US-0148341.  
PR 12-AUG-1999; 99US-0148341.  
PR 13-AUG-1999; 99US-0148565.  
PR 13-AUG-1999; 99US-0148684.  
PR 16-AUG-1999; 99US-0149368.  
PR 17-AUG-1999; 99US-0149175.  
PR 18-AUG-1999; 99US-0149426.  
PR 20-AUG-1999; 99US-0149722.  
PR 20-AUG-1999; 99US-0149723.  
PR 20-AUG-1999; 99US-0149929.  
PR 23-AUG-1999; 99US-0149902.  
PR 23-AUG-1999; 99US-0149930.  
PR 25-AUG-1999; 99US-0150566.  
PR 26-AUG-1999; 99US-0150884.  
PR 27-AUG-1999; 99US-0151065.  
PR 27-AUG-1999; 99US-0151066.  
PR 27-AUG-1999; 99US-0151080.  
PR 30-AUG-1999; 99US-0151303.  
PR 31-AUG-1999; 99US-0151303.  
PR 01-SEP-1999; 99US-0151930.  
PR 07-SEP-1999; 99US-0152363.  
PR 10-SEP-1999; 99US-0153070.  
PR 13-SEP-1999; 99US-0153758.  
PR 15-SEP-1999; 99US-0154018.

PR 16-SEP-1999; 99US-0154039.  
 PR 20-SEP-1999; 99US-0154779.  
 PR 22-SEP-1999; 99US-0155139.  
 PR 23-SEP-1999; 99US-0155486.  
 PR 24-SEP-1999; 99US-0155569.  
 PR 28-SEP-1999; 99US-0156458.  
 PR 29-SEP-1999; 99US-0156599.  
 PR 04-OCT-1999; 99US-0157117.  
 PR 05-OCT-1999; 99US-0157553.  
 PR 06-OCT-1999; 99US-0157865.  
 PR 07-OCT-1999; 99US-0158029.  
 PR 08-OCT-1999; 99US-0158232.  
 PR 12-OCT-1999; 99US-0158369.  
 PR 13-OCT-1999; 99US-0159293.  
 PR 13-OCT-1999; 99US-0159294.  
 PR 13-OCT-1999; 99US-0159295.  
 PR 14-OCT-1999; 99US-0159329.  
 PR 14-OCT-1999; 99US-0159330.  
 PR 14-OCT-1999; 99US-0159331.  
 PR 14-OCT-1999; 99US-0159637.  
 PR 14-OCT-1999; 99US-0159638.  
 PR 18-OCT-1999; 99US-0159584.  
 PR 21-OCT-1999; 99US-0160741.  
 PR 21-OCT-1999; 99US-0160767.  
 PR 21-OCT-1999; 99US-0160768.  
 PR 21-OCT-1999; 99US-0160770.  
 PR 21-OCT-1999; 99US-0160814.  
 PR 21-OCT-1999; 99US-0160815.  
 PR 22-OCT-1999; 99US-0160980.  
 PR 22-OCT-1999; 99US-0160981.  
 PR 22-OCT-1999; 99US-0160989.  
 PR 25-OCT-1999; 99US-0161404.  
 PR 25-OCT-1999; 99US-0161405.  
 PR 25-OCT-1999; 99US-0161406.  
 PR 26-OCT-1999; 99US-0161359.  
 PR 26-OCT-1999; 99US-0161360.  
 PR 26-OCT-1999; 99US-0161361.  
 PR 28-OCT-1999; 99US-0161920.  
 PR 28-OCT-1999; 99US-0161992.  
 PR 28-OCT-1999; 99US-0161993.  
 PR 29-OCT-1999; 99US-0162142.

Query Match 82.2%; Score 1349; DB 21; Length 263;  
 Best Local Similarity 100.0%; Pred. NO. 4e-123;  
 Matches 263; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 52 MLEAKSDVKEPILSNYYASTSHRSLESALAHILSVKLSNINLPSNLFELFISYLE 111  
 DB 1 mleaksdvkeplsnnyyastshrslesalahilsvklsnlnlpntlfelfisyle 60  
 QY 112 ESPFETESTKODLAVKRDPACTSYVHCEFLGKGFACQAHRIAHILWKONRKIVALLI 171  
 DB 61 espfetestkdllavkerdpactisyvhceflgkgyflacqahriahetlwkgnrkivalli 120  
 QY 172 QNRVSESAVNIHFGAKIGKGIILDHANGVYIGFAVGVNDVSIHLHCVTIGGTGKOSGDR 231  
 DB 121 qnrveseavnihpqakigkgiilidhavgvigtavavdnvsihlhcvtlggtgkgsqdr 180  
 QY 232 HPKIGDGVILGAGSCILGNITIGEGAKIGSGSVVKKDVPARTTAVGNPARIIGKENPRK 291  
 DB 181 hpkgdgvilgagscilgnitigegakigsgsvvkvdpattavgnparliigkenprk 240  
 QY 292 HDKIPCLTMDOTSYLTWMSDYVI 314  
 DB 241 hdkipcltmdqtsyltewsdyl 263

RESULT 4  
 AAY93903  
 ID AAY93903 standard; Protein: 336 AA.  
 XX  
 AC AAY93903;  
 XX

DT 03-OCT-2000 (first entry)  
 XX  
 DE Amino acid sequence of serine acetyltransferase (SAT) isoform SAT1'.  
 XX  
 KW Serine acetyltransferase; SAT; SAT1'; transgenic plant; cysteine;  
 KW glutathione; methionine; nutrient value; plant-derived food;  
 KW glutathione; viral resistance.  
 XX  
 OS Arabidopsis thaliana.  
 XX  
 PN W0200036127-A1.  
 XX  
 PD 22-JUN-2000.  
 XX  
 PF 17-DEC-1999; 99WO-FR03179.  
 XX  
 PR 17-DEC-1998; 98FR-0016163.  
 XX  
 PA (AVET ) AVENTIS CROPS SCIENCE SA.  
 XX  
 PI Dröux M, Lappartient A, Derose R, Job D;  
 XX  
 DR N-PSDB; AAA47175.  
 XX  
 PT Increasing production of sulfur-containing compounds, e.g. cysteine or  
 PT methionine, in plants, useful e.g. for improving nutritional value, by  
 PT overexpressing serine acetyltransferase  
 XX  
 PS Claim 14; Page 53-54; 69pp; French.  
 XX  
 CC The present sequence represents an isoform of serine acetyltransferase  
 CC (SAT). The SAT polynucleotide is used to produce transgenic plants,  
 CC which have increased production of cysteine, glutathione, methionine  
 CC and their sulfur-containing derivatives. SAT catalyses conversion of  
 CC serine to O-acetylsertine which is a precursor (by reaction with sulphide)  
 CC for cysteine, itself a precursor for the other sulphur-containing  
 CC compounds. The SAT polynucleotides and polypeptides are used to improve  
 CC the nutrient value of plant-derived foods, and also (associated with  
 CC increased production of glutathione) to improve resistance to stress.  
 XX  
 SO Sequence 336 AA;

Query Match 74.0%; Score 1215; DB 21; Length 336;  
 Best Local Similarity 72.0%; Pred. No. 6.2e-110;  
 Matches 242; Conservative 31; Mismatches 41; Indels 22; Gaps 4;

QY 1 MARCITDTCRGNTQ-----DDSRPCCIKNFFRCPS---VNRKIHHTQ--IFD 44  
 DB 1 maacitdctcrgkqpsprdsakhddesqfrymnyfrp:ressfngtqlkltlrplled 60  
 QY 45 -----DDDWIKMLEAKSDVKEPILSNYYASTSHRSLESALAHILSVKLSNINLP 98  
 DB 61 lidaevdvwaklreesaakdlakepivasaynasivsqrsleaalnclsvklsnlnlp 120  
 QY 99 SNTLFELFISVLEESPELTESTKODLAVKRDPACTSYVHCEFLGKGFACQAHRIAH 158  
 DB 121 sntlfelfisvlgvnpdviesvklldlavkerdpactisyvhceflhkgfllacqahriahe 180  
 QY 159 LMKONRKIVALLIQNRVSESAVNIHFGAKIGKGIILDHANGVYIGFAVGVNDVSIHLG 218  
 DB 181 lwcqdrkllallilqnrveseafavdfrpakiqgtlldhna:alvigtavavgnvsihlh 240  
 QY 219 VTLGSGTGKOSGDRHPKIGDGVILGAGSCILGNITIGEGAKIGSGSVVKKDVPARTTAVGN 278  
 DB 241 vtlgsgtgkgqgdhpkigdgvilgagscilgnitigegakigsgsvvkvdpattavgn 300  
 QY 279 PARLIGKENPRKHKIPCLTMDOTSYLTWMSDYVI 314  
 DB 301 parliigkenprkhdkipcltmdqtsyltewsdyl 336

RESULT 5  
AA93904 standard; Protein: 391 AA.  
ID AA93904 standard; Protein: 391 AA.  
XX  
XX  
AA93904;  
XX  
XX  
03-OCT-2000 (first entry)  
XX  
XX  
Amino acid sequence of serine acetyltransferase (SAT) isoform SAT1.  
DE  
XX  
Serine acetyltransferase; SAT; SAT1; transgenic plant; cysteine;  
KW glutathione; methionine; nutrient value; plant-derived food;  
KW glutathione; viral resistance.  
XX  
XX  
Arabidopsis thaliana.  
XX  
XX  
Key Location/Qualifiers  
FT Peptide 1..63  
FT /note="signal peptide"  
XX  
XX  
MO200036127-A1.  
XX  
XX  
22-JUN-2000.  
XX  
XX  
17-DEC-1999; 99WO-FR03179.  
XX  
XX  
17-DEC-1998; 98FR-0016163.  
XX  
XX  
(AVET) AVENTIS CROPS SCIENCE SA.  
XX  
XX  
Droux M, Lapartient A, Derose R, Job D;  
XX  
XX  
WPI: 2000-431603/37.  
XX  
XX  
N-PSDB; AAA47176.  
XX  
XX  
Increasing production of sulfur-containing compounds, e.g. cysteine or  
PT methionine, in plants, useful e.g. for improving nutritional value, by  
PT overexpressing serine acetyltransferase  
XX  
XX  
PS Disclosure; Page 54-56; 6pp; French.  
XX  
XX  
The present sequence represents an isoform of serine acetyltransferase  
CC (SAT). The SAT polynucleotide is used to produce transgenic plants,  
CC which have increased production of cysteine, glutathione, methionine  
CC and their sulfur-containing derivatives. SAT catalyses conversion of  
CC serine to O-acetyls erine which is a precursor (by reaction with sulphide)  
CC for cysteine, itself a precursor for the other sulphur-containing  
CC compounds. The SAT polynucleotides and polypeptides are used to improve  
CC the nutrient value of plant-derived foods, and also (associated with  
CC increased production of glutathione) to improve resistance to stress.  
XX  
XX  
Sequence 391 AA:

Query Match 74.0%; Score 1215; DB 21; Length 391;  
Best Local Similarity 72.0%; Pred. No. 7, 7e-110;  
Matches 242; Conservative 31; Mismatches 41; Indels 22; Gaps 4;

QY 1 MARCIDRCRTGNTQ-----DDSRRCCKNFRGFS---VNRKIHHTO--IED 44  
DB 56 maacidrcrtgkqjpsprdsckhndesgrtymyfrprsfngtqkclhtrplld 115  
QY 45 -----DDDVWIKLEAKSDVQEPILSNVYVASTSHRSLSALHLVSLNMLNP 98  
DB 116 lddaeavdwaktreakekdiakpivsayhasivsgsalaalantlsvlnlnlp 175  
QY 99 SNLFEFLFISVLESPPIISTKODLIAYKERDPACISYVHCFLGKGLACQAHIAHT 158  
DB 176 snlfdlfsvglgnpdivesvklidlavkerpaciisyhclfhkylfaacahiahe 235  
QY 159 LMKONRKIVALLIONRVSSEFAVDHPGAKIGKIGLLDHAATGVIGETAVAGNVSLILG 218  
DB 236 lwdqdrkllallignvseafavdhpgakigcigllldhataivgetavagmvslilm 295

QY 219 VTIGTGKSGDRRPRKIGDGLVIGAGSCIIINTIGEGAT JSGSVYKDVPAARTAVGN 278  
DB 296 vtlggtgkqcgdrhpkigdvgligatciligaltigegak jagsvvlkdvpprtavgn 355  
QY 279 PARLIGKRNKPKHDKIPCLTMDQTSYLTWSDYVI 314  
DB 356 parllgskdnkpkthdkipglmdqtslnhsewsdyvi 393

RESULT 6  
AA932485 standard; Protein: 1772 AA.  
ID AA932485 standard; Protein: 1772 AA.  
XX  
XX  
AA932485;  
XX  
XX  
18-OCT-2000 (first entry)  
XX  
XX  
Arabidopsis thaliana protein fragment SEQ ID NO: 66722.  
DE  
XX  
Protein identification; signal transduction pathway; metabolic pathway;  
KW hybridisation assay; genetic mapping; gene expression control; promoter;  
KW termination sequence.  
XX  
XX  
Arabidopsis thaliana.  
XX  
XX  
EP1033405-A2.  
XX  
XX  
06-SEP-2000.  
XX  
XX  
25-FEB-2000; 2000EP-0301439.  
XX  
XX  
25-FEB-1999; 99US-0121825.  
PR 05-MAR-1999; 99US-0123180.  
PR 09-MAR-1999; 99US-0123548.  
PR 23-MAR-1999; 99US-0125788.  
PR 25-MAR-1999; 99US-0126264.  
PR 29-MAR-1999; 99US-0126785.  
PR 01-APR-1999; 99US-0127462.  
PR 06-APR-1999; 99US-0128234.  
PR 08-APR-1999; 99US-0128714.  
PR 16-APR-1999; 99US-0129845.  
PR 19-APR-1999; 99US-0130077.  
PR 21-APR-1999; 99US-0130449.  
PR 23-APR-1999; 99US-0130510.  
PR 28-APR-1999; 99US-0130891.  
PR 30-APR-1999; 99US-0132048.  
PR 30-APR-1999; 99US-0132407.  
PR 04-MAY-1999; 99US-0132484.  
PR 05-MAY-1999; 99US-0132485.  
PR 06-MAY-1999; 99US-0132486.  
PR 07-MAY-1999; 99US-0132487.  
PR 11-MAY-1999; 99US-0134256.  
PR 14-MAY-1999; 99US-0134218.  
PR 14-MAY-1999; 99US-0134219.  
PR 14-MAY-1999; 99US-0134221.  
PR 14-MAY-1999; 99US-0134370.  
PR 18-MAY-1999; 99US-0134376.  
PR 19-MAY-1999; 99US-0134941.  
PR 20-MAY-1999; 99US-0135124.  
PR 21-MAY-1999; 99US-0135353.  
PR 24-MAY-1999; 99US-0135629.  
PR 25-MAY-1999; 99US-0136021.  
PR 27-MAY-1999; 99US-0136392.  
PR 28-MAY-1999; 99US-0136782.  
PR 01-JUN-1999; 99US-0137222.  
PR 03-JUN-1999; 99US-0137528.  
PR 04-JUN-1999; 99US-0137502.  
PR 07-JUN-1999; 99US-0137724.  
PR 08-JUN-1999; 99US-0138094.  
PR 10-JUN-1999; 99US-0138540.



Db 41 maacldtcrtgkqispresckhndesgrfymnyfrypdrssingrctkclhrtpiled 100  
Oy 45 -----DDDWIMKLEAKSDVKOEPLISNYYASITSHRLESALHILSVKLSNENLP 98  
Db 101 ldtadavdwaklreaskdlaekpivsaynasivsqslaealaatlsvkslnlhp 160  
Oy 99 SNTLFELFISVLESPRIISTKODLAVKERDPACISYVHCFLGFKGLACQAHRIAMT 158  
Db 161 snlfdlfgslvglnpvlivesvkldlavkerdpacisynhflhfkglacqahriae 220  
Oy 159 LMKONKIVALLIONRSESAVDIHGAKIGKGIILDHAGVITGEAVGVNDVSIHG 218  
Db 221 lwtcdtrkilaillqnrseeafvflhpgaklglgilldhataivgecavvnmvslhn 280  
Oy 219 VTIIGTGKQSGDRHPIGDEVILGAGSCILGNITIGEGAKIGSGSVVKKVDPARTAVGN 278  
Db 281 vtlggtgkqgdrhpkigdgylilgagtcilgnitlgegaklgagsvvlkdvprttavgn 340  
Oy 279 PARLIGKENPRKHDKITPCLTMDOTSYLTEMSDYVI 314  
Db 341 parllgqknhpkthdkipglmdqtlshsewsvly 376

RESULT 7  
AAG52484  
ID AAG52484 standard; Protein; 1776 AA.  
XX AAG52484;  
XX  
XX 18-OCT-2000 (first entry)  
XX  
XX  
XX Arabidopsis thaliana protein fragment SFO ID NO: 66721.  
XX  
XX Protein identification; signal transduction pathway; metabolic pathway;  
XX hybridisation assay; genetic mapping; gene expression control; promoter;  
XX termination sequence.  
XX  
XX Arabidopsis thaliana.  
OS  
XX  
XX EP1033405-A2.  
XX  
XX  
XX 06-SEP-2000.  
XX  
XX  
XX 25-FEB-2000; 2000EP-0301439.  
XX  
XX  
XX 25-FEB-1999; 990S-0121825.  
XX 05-MAR-1999; 990S-0123180.  
XX 09-MAR-1999; 990S-0123548.  
XX 23-MAR-1999; 990S-0125788.  
XX 25-MAR-1999; 990S-0126264.  
XX 29-MAR-1999; 990S-0126785.  
XX 01-APR-1999; 990S-0127462.  
XX 06-APR-1999; 990S-0128234.  
XX 08-APR-1999; 990S-0128714.  
XX 16-APR-1999; 990S-0129845.  
XX 19-APR-1999; 990S-0130077.  
XX 21-APR-1999; 990S-0130449.  
XX 23-APR-1999; 990S-0130510.  
XX 28-APR-1999; 990S-0130891.  
XX 30-APR-1999; 990S-0131449.  
XX 30-APR-1999; 990S-0132048.  
XX 30-APR-1999; 990S-0132407.  
XX 04-MAY-1999; 990S-0132484.  
XX 05-MAY-1999; 990S-0132485.  
XX 06-MAY-1999; 990S-0132486.  
XX 07-MAY-1999; 990S-0132487.  
XX 11-MAY-1999; 990S-0132863.  
XX 14-MAY-1999; 990S-0134218.  
XX 14-MAY-1999; 990S-0134219.  
XX 14-MAY-1999; 990S-0134221.  
XX 14-MAY-1999; 990S-0134370.  
XX 18-MAY-1999; 990S-0134768.

PR 19-MAY-1999; 990S-0134941.  
PR 20-MAY-1999; 990S-0135124.  
PR 21-MAY-1999; 990S-0135353.  
PR 24-MAY-1999; 990S-0135637.  
PR 25-MAY-1999; 990S-0136021.  
PR 27-MAY-1999; 990S-0136392.  
PR 28-MAY-1999; 990S-0136782.  
PR 01-JUN-1999; 990S-0137222.  
PR 03-JUN-1999; 990S-0137528.  
PR 04-JUN-1999; 990S-0137502.  
PR 07-JUN-1999; 990S-0137724.  
PR 08-JUN-1999; 990S-0138094.  
PR 10-JUN-1999; 990S-0138540.  
PR 10-JUN-1999; 990S-0138847.  
PR 14-JUN-1999; 990S-0139119.  
PR 16-JUN-1999; 990S-0139452.  
PR 16-JUN-1999; 990S-0139453.  
PR 17-JUN-1999; 990S-0139452.  
PR 18-JUN-1999; 990S-0139454.  
PR 18-JUN-1999; 990S-0139455.  
PR 18-JUN-1999; 990S-0139456.  
PR 18-JUN-1999; 990S-0139457.  
PR 18-JUN-1999; 990S-0139458.  
PR 18-JUN-1999; 990S-0139459.  
PR 18-JUN-1999; 990S-0139460.  
PR 18-JUN-1999; 990S-0139461.  
PR 18-JUN-1999; 990S-0139462.  
PR 18-JUN-1999; 990S-0139463.  
PR 18-JUN-1999; 990S-0139750.  
PR 18-JUN-1999; 990S-0139763.  
PR 18-JUN-1999; 990S-0139817.  
PR 22-JUN-1999; 990S-0139899.  
PR 23-JUN-1999; 990S-0140353.  
PR 24-JUN-1999; 990S-0140695.  
PR 28-JUN-1999; 990S-0140823.  
PR 29-JUN-1999; 990S-0140921.  
PR 30-JUN-1999; 990S-0141287.  
PR 01-JUL-1999; 990S-0141842.  
PR 01-JUL-1999; 990S-0142154.  
PR 02-JUL-1999; 990S-0142055.  
PR 06-JUL-1999; 990S-0142390.  
PR 08-JUL-1999; 990S-0142803.  
PR 09-JUL-1999; 990S-0142920.  
PR 12-JUL-1999; 990S-0142977.  
PR 13-JUL-1999; 990S-0143542.  
PR 14-JUL-1999; 990S-0143624.  
PR 15-JUL-1999; 990S-0144005.  
PR 16-JUL-1999; 990S-0144085.  
PR 16-JUL-1999; 990S-0144086.  
PR 19-JUL-1999; 990S-0144325.  
PR 19-JUL-1999; 990S-0144331.  
PR 19-JUL-1999; 990S-0144332.  
PR 19-JUL-1999; 990S-0144333.  
PR 19-JUL-1999; 990S-0144334.  
PR 19-JUL-1999; 990S-0144335.  
PR 19-JUL-1999; 990S-0144332.  
PR 20-JUL-1999; 990S-0144632.  
PR 20-JUL-1999; 990S-0144884.  
PR 21-JUL-1999; 990S-0144814.  
PR 21-JUL-1999; 990S-0145086.  
PR 21-JUL-1999; 990S-0145088.  
PR 22-JUL-1999; 990S-0145087.  
PR 22-JUL-1999; 990S-0145089.  
PR 22-JUL-1999; 990S-0145192.  
PR 23-JUL-1999; 990S-0145145.  
PR 23-JUL-1999; 990S-0145228.  
PR 23-JUL-1999; 990S-0145224.  
PR 26-JUL-1999; 990S-0145276.  
PR 27-JUL-1999; 990S-0145913.  
PR 27-JUL-1999; 990S-0145918.  
PR 27-JUL-1999; 990S-0145919.



23-APR-1999; 99US-0130891.



PR 21-OCT-1999; 99US-0160741.  
PR 21-OCT-1999; 99US-0160767.  
PR 21-OCT-1999; 99US-0160768.  
PR 21-OCT-1999; 99US-0160770.  
PR 21-OCT-1999; 99US-0160814.  
PR 21-OCT-1999; 99US-0160815.  
PR 22-OCT-1999; 99US-0160980.  
PR 22-OCT-1999; 99US-0160981.  
PR 22-OCT-1999; 99US-0160989.  
PR 25-OCT-1999; 99US-0161404.  
PR 25-OCT-1999; 99US-0161405.  
PR 26-OCT-1999; 99US-0161359.  
PR 26-OCT-1999; 99US-0161360.  
PR 26-OCT-1999; 99US-0161361.  
PR 28-OCT-1999; 99US-0161920.  
PR 28-OCT-1999; 99US-0161922.  
PR 28-OCT-1999; 99US-0161993.  
PR 29-OCT-1999; 99US-0162142.

Query Match 73.9%; Score 1213; DB 21; Length 1787;  
Best Local Similarity 71.4%; Pred. No. 1.1e-108;  
Matches 240; Conservative 33; Mismatches 41; Indels 22; Gaps 4;

QY 1 MATCIDTCRTGNTQ-----DDDSRRCICKNFRPGFS---VNRKIHHTQ--TED 44  
Db 56 maacldtrctgkpsprskhhdessgfrymyfirpdrsfngtqtklhrplled 115  
QY 45 -----DDDWIKMLEAKSDVKOEPILSNYYASTSHRSLSALAHISVKLSNLP 98  
Db 116 ldrdaevdvvaklireeakdlakeplvsaayhaslvsqslaalantlsvkslnlp 175  
QY 99 SNTLFELISVLESEPEETIESRKODIAKRPACISYHCHLGRFGFLACQAHRIAT 158  
Db 176 snlfdlfsyldgpnplvesykdllavkcrpaciysvhcflhfygllacqahriahe 235  
QY 159 LMKONRKIVALLIQNRVSESAVDIHPGAKIGKIGLIDHATGVIGETAVGVNDVSTLHG 218  
Db 236 lwtgdrklalllqnrveafavdflhpgakigtgllldataavlgetavgnvslhm 295  
QY 219 VTLGGTGOSGDRHPKIGDGVILIGSGCLIGNITTEGAKIGSGSVVVKDVPARTAVGN 278  
Db 296 vtlggtgqgdrhpkigdgvdylgagtlcillgnlilgagakiagsvvlkdvprttaavn 355  
QY 279 PARLIGKENRKHDKIPCLTMDQTSYLTMSDYVI 314  
Db 356 parllggkdpkndkplglumdgshlsewsdyiv 391

## RESULT 9

AAG08083 standard; Protein; 180 AA.

AAG08083;

DT 17-OCT-2000 (first entry)

DE Arabidopsis thaliana protein fragment SEQ ID NO: 5483.

KW Protein identification: signal transduction pathway; metabolic pathway;  
KW hybridisation assay; genetic mapping; gene expression control; promoter;  
KW termination sequence.

OS Arabidopsis thaliana.

PN EP1033405-A2.

PD 06-SEP-2000.

PF 25-FEB-2000; 2000EP-0301439.

PR 25-FEB-1999; 99US-0121825.  
PR 05-MAR-1999; 99US-0123180.

PR 09-MAR-1999; 99US-0123548.  
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PR 04-OCT-1999; 99US-0157117.
PR 05-OCT-1999; 99US-0157753.

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PR 06-OCT-1999; 99US-0157865.
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PR 28-OCT-1999; 99US-0161920.
PR 28-OCT-1999; 99US-0161920.
PR 28-OCT-1999; 99US-0161920.
PR 29-OCT-1999; 99US-0162142.

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Query Match 55.8%; Score 916; DB 21; Length 180;  
 Best Local Similarity 97.2%; Pred. No. 3; le-81;  
 Matches 175; Conservative 2; Mismatches 3; Indels 0; Gaps 0;

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QY 1 MATCIDTCRTGNTODDSDRFCCIKNFRPGFSVNRKRIHTQIEDDDDWIKMLEAKSDV 60
D 1 matchhctrlgtqddsdrrfcccinkffrpgfsvnrkrlhtqieddddwikmlkeesdv 60
QY 61 KQEPILSNYYASTSHSLESAHLIIISVKISNLMLEPNTPELFSVYEESEPEIEST 120
D 61 kqepilsnyyastshslesahlilsvkislmlpntlfeiflsvleespeiest 120
QY 121 KODIAVERPACISYVHCFGFGFLACQAHRIAHITLKKONRKIVALLIQNRVSEFA 180
D 121 kqdliaverpaci syvhc ffgf gflacqahriahitl kkonrkivalliqnrvesefa 180

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RESULT 10
AAV44770
ID AAV44770 standard; Protein: 286 AA.
XX
AC AAV44770;
XX
XX 04-MAY-2000 (first entry)
XX
DE Soybean serine O-acetyltransferase-1.
XX
KW Serine O-acetyltransferase; sulphate assimilation; O-acetylserine;
KW soybean; clone srl.pK0162.49; cysteine formation; marker; probe;
KW plant breeding; transgenic plant.
XX
OS Glycine max.
XX
PN WO200004167-A2.
XX
XX 27-JAN-2000.
PD
XX 13-JUL-1999; 99WO-US15872.
PF
XX 14-JUL-1999; 98US-0092833.

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18-JUN-1999; 99US-0139750.  
18-JUN-1999; 99US-0139750.

XX	Arabidopsis thaliana protein fragment SEQ ID NO: 23500.
DE	
XX	Protein identification; signal transduction pathway; metabolic pathway;
KW	hybridisation assay; genetic mapping; gene expression control; promoter;
KW	termination sequence.
XX	
OS	Arabidopsis thaliana.
XX	
PN	EPI033405-A2.
XX	
PD	06-SEP-2000.
XX	
PF	25-FEB-2000; 2000EP-0301439.
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PR	09-MAR-1999; 99US-0123548.
PR	23-MAR-1999; 99US-0125788.
PR	25-MAR-1999; 99US-0126264.
PR	29-MAR-1999; 99US-0126785.
PR	01-APR-1999; 99US-0127462.
PR	06-APR-1999; 99US-0128234.
PR	08-APR-1999; 99US-0128714.
PR	16-APR-1999; 99US-0129845.
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PR	18-JUN-1999; 99US-0139463.
PR	18-JUN-1999; 99US-0139750.
PR	18-JUN-1999; 99US-0139763.





## RESULT 14

AAV44767

ID AAV44767 standard; Protein: 294 AA.

XX AAV44767;

DT 04-MAY-2000 (first entry)

XX Impatiens balsamiae serine O-acetyltransferase.

XX Serine O-acetyltransferase; sulphate assimilation; clone id: PK0030.b6;  
 KW O-acetylserine; cysteine formation; marker; probe; plant breeding;  
 KM transgenic plant.

XX Impatiens balsamiae.

XX WO200004167-A2.

XX 27-JAN-2000.

XX 13-JUL-1999; 99WO-US15872.

XX 14-JUL-1998; 98US-0092833.

XX (DUPO ) DU PONT DE NEMOURS &amp; CO E I.

XX Falco SC, Allen SM, Maxwell CA;

XX WPI: 2000-182432/16.

XX N-PSDB; AA250084.

PT New isolated nucleic acid fragment encoding a sulfate assimilation  
 PT protein in plants, useful as probes to isolate genes encoding  
 PT homologous proteins from other plant species

XX Claim 6; Page 34; 44pp; English.

XX The present amino acid sequence is the serine O-acetyltransferase, a  
 CC sulphate assimilation protein from *Impatiens balsamiae*. This is obtained  
 CC from clone id: PK0030.b6, derived from I. balsamiae developing seed,  
 CC id: cDNA library. It has 80% identity to Citrullus lanatus serine  
 CC O-acetyltransferase. Serine O-acetyltransferase converts serine  
 CC to O-acetylserine, that is involved in the formation of cysteine.  
 CC This sequence is used as a probe to isolate other plant sulphate  
 CC assimilation proteins, for genetic and physical mapping of related genes  
 CC and as markers of traits linked to the gene. This is useful for plant  
 CC breeding. It is also used to create transgenic plants with altered  
 CC levels of serine O-acetyltransferase, or found in cell types or  
 CC developmental stages in which they are not normally found.

XX Sequence 294 AA;

Query Match 51.6%; Score 846; DB 21; Length 294;  
 Best Local Similarity 57.8%; Pred. No. 4.1e-74;

Matches 159; Conservative 51; Mismatches 63; Indels 2; Gaps 1;

42 IDDDDD--WIKMLEAKSDVKOEPIISNYTASITSHRSLSALAHILSVKLSNLMNPS 99

DB 20 vedaeesgywsqtkkaearrdaesepalasylystlshsllaaslsrlhpnkicsclls 79

QY 100 NTLFELFISVLESPEIISTKODLIAVKEKDPACISYVHCFGKFLACQAHRIANTL 159

DB 80 tlllydlflglvssdaslraavdlraarqrpacsfshcllnyxfllaigqrvahkm 139

QY 160 WKONKRYALLIONRVSEFAVDIHGAKIGKILDHATGVVIGFAVVDGDNVSTIAGV 219

DB 140 wsgnkpkslslasqrsiadvsvdipaarigvllldatgyvigtetavaygnvslhhv 199

QY 220 TLGGTGKSGDRHPRKIGGVVLGAGSCITIGNITIGGAGIIGSGSVVAVKQVPAVAVGNP 279

## RESULT 15

AAV44768

ID AAV44768 standard; Protein: 303 AA.

XX AAV44768;

DT 04-MAY-2000 (first entry)

XX Rice serine O-acetyltransferase-1.

XX Serine O-acetyltransferase; sulphate assimilation; O-acetylserine;  
 KW rice; clone rlr24.pk0069.all; cysteine formation; marker; probe;  
 KM plant breeding; transgenic plant.

XX Oryza sativa.

XX Key Location/Qualifiers

XX Misc-difference 26 /note="Encoded by GCG"

XX WO200004167-A2.

XX 27-JAN-2000.

XX 13-JUL-1999; 99WO-US15872.

XX 14-JUL-1998; 98US-0092833.

XX (DUPO ) DU PONT DE NEMOURS &amp; CO E I.

XX Falco SC, Allen SM, Maxwell CA;

XX WPI: 2000-182432/16.

XX N-PSDB; AA250085.

PT New isolated nucleic acid fragment encoding a sulfate assimilation  
 PT protein in plants, useful as probes to isolate genes encoding  
 PT homologous proteins from other plant species

XX Claim 6; Page 35-36; 44pp; English.

XX The present sequence is the rice serine O-acetyltransferase, a sulphate  
 CC assimilation protein. This is obtained from rice leaf infected with *Mageporthe grisea*  
 CC strain 4360-R-62. It has 72% sequence identity to Citrullus lanatus  
 CC serine O-acetyltransferase. Serine O-acetyltransferase converts  
 CC serine to O-acetylserine, that is involved in the formation of cysteine.  
 CC This sequence is used as a probe to isolate other plant sulphate  
 CC assimilation proteins, for genetic and physical mapping of related genes  
 CC and as markers of traits linked to the gene. This is useful for plant  
 CC breeding. It is also used to create transgenic plants with altered  
 CC levels of serine O-acetyltransferase, or found in cell types or  
 CC developmental stages in which they are not normally found.

XX Sequence 303 AA;

Query Match 50.6%; Score 831; DB 21; Length 303;  
 Best Local Similarity 59.0%; Pred. No. 1.2e-72;

Matches 160; Conservative 44; Mismatches 63; Indels 4; Gaps 1;

44 DDDVWIKMLEAKSDVKOEPIISNYTASITSHRSLSALAHILSVKLSNLMNPSNTLF 103

DB 37 desvwwsqikeearrdaadaepalaslyatvshpslrsstlaflhankicsstllstilly 96

QY 104 ELFTSVLESPEIISTKODLIAVKEKDPACISYVHCFGKFLACQAHRIANTLMKON 163

Tue Aug 28 11:09:10 2001

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Db 97 dlfvaslaahpcllraavvadllaarsrdbacvghncllnykylalqagrvahtwaqd 156
OY 164 KRIVALLTONRVSSEFADVHPGAKIGKGIILDHATGVVIGETAVVGDVNSILHGVTLLG 223
Db 157 rralalqsrvaevafavdhpaaalqkgyllidheltgavlgelavlgdnvslhvtl199 216
OY 224 TKGOSGDRHPRKIGDGVLIAGSCITLGNITIGEGAKIGSGSVVYKDPARTTAVGNPARLI 283
Db 217 tskavgdrrhpkigdyvlligagatlignvrligagakiagslvi1dvpprtcaavgnparli 276
OY 284 CGKENPRKHDKTIPCLTMDOTSYLTWSDYVI 314
Db 277 gqk---kgdmpgesmdhtsf1qwsdysi 303
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